Applicants wish to bring to the attention of the Examiner the following related patents and patent applications.

Applications

08/544,343

08/971,284

09/323,624

08/982,321

09/464,179

Patents

5,652,193

5,766,274

The following is a list of preferred analytical techniques useful for measuring various claimed properties.

Weight percent of paraffins. The weight percent of paraffins may be measured by high-resolution ^{1}H-NMR, for example, by the method described in ASTM standard D5292, in combination with GC-MS. This approach may also be used to determine the weight percentage of unsaturates, alcohols, oxygenates, and other organic components.

Iso- to normal-paraffin ratio. The iso- to normal-paraffin ratio may be measured by performing GC-MS in combination with ^{13}C-NMR.

Sulfur. As taught in the specification, sulfur may be measured by XRF (X-Ray Fluorescence), as described, for example, in ASTM standard D2622.

Nitrogen. Nitrogen may be measured by syringe/inlet oxidative combustion with chemiluminescence detection, for example, by the method described in ASTM standard D4629.

Unsaturates (aromatics and olefins). Aromatics may be measured as described

Oxygen or oxygenates as oxygen on a water-free basis. As taught by the specification, the weight percent of total oxygen may be measured by neutron activation in

combination with high-resolution ^{1}H-NMR. If necessary, the total oxygen content may be placed on a water-free basis by measuring water content. For samples having a water content known to be less than about 200 ppm by weight, one may use known derivitization methods (e.g., by using calcium carbide to form acetylene) followed by GC-MS. For samples having a water content known to be greater than about 200 ppm by weight, one may use the Karl-Fischer method, for example, by the method described in ASTM standard D4928.

Oxygen present primarily as C_{12}-C_{24} linear alcohols. As taught by the specification, the total alcohol content may be determined by high-resolution ^{1}H-NMR, and the percentage present primarily as C_{12}-C_{24} primary alcohols may be determined by GC-MS.

Cetane number. Cetane number may be determined by using, for example, ASTM standard D613.

Aromatics. The level of aromatics may be determined by using high-resolution ^{1}H-NMR, for example, by using ASTM standard D5292.

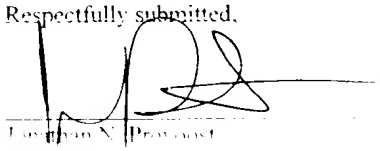
Dioxygenates. As taught by the specification, dioxygenates are measured by using infrared (IR) absorbance spectroscopy.

Hydrogen-bonding energies. Hydrogen-bonding energies may be measured by high-resolution, variable-concentration, ^{1}H-NMR. See e.g., Pál Sohár, 2 Nuclear Magnetic Resonance Spectroscopy § 3.7, 92-102 (CRC Press Inc. 1983).

Branching characteristics of iso-paraffins. Branching characteristics of iso-paraffins may be measured by a combination of high-resolution ^{13}C-NMR and GC with high-resolution MS.

Alpha. "Alpha" refers to a parameter in the Anderson-Flory-Schulz distribution, and may be determined as reported in J. Eilers et al., The Shell Middle Distillate Synthesis Process (SMDS) in 7 Catalysis Letters 253-270 (1990).

Respectfully submitted,



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